

We claim:

1. A process for the continuous preparation of chlorine by reaction of hydrogen chloride with oxygen in the presence of a heterogeneous catalyst, wherein the conversion of hydrogen chloride in a single pass through the reactor is restricted to from 15 to 90%.
- 5 10 2. A process for the continuous preparation of chlorine as claimed in claim 1, wherein some or all of the unreacted hydrogen chloride is recirculated.
- 15 3. A process for the continuous preparation of chlorine as claimed in claim 1, wherein the hydrogen chloride conversion in a single pass is restricted to from 20 to 80%.
- 20 4. A process for the continuous preparation of chlorine as claimed in claim 1, wherein the hydrogen chloride conversion in a single pass is restricted to from 25 to 70%.
- 25 5. A process for the continuous preparation of chlorine as claimed in claim 1, wherein the hydrogen chloride conversion in a single pass is restricted to from 30 to 60%.
- 30 6. A process for the continuous preparation of chlorine as claimed in any of claims 1 to 5, wherein the heterogeneous catalyst used is a doped or undoped supported ruthenium catalyst.
- 35 7. A process for the continuous preparation of chlorine as claimed in any of claims 1 to 6, wherein the proportion of recirculated hydrogen chloride is gradually increased during the time of operation of the catalyst.
8. A process for the continuous preparation of chlorine as claimed in any of claims 1 to 7, wherein the reaction is carried out using from 2 to 10 reactors connected in series.
- 40 9. A process for the continuous preparation of chlorine as claimed in claim 8, wherein the introduction of oxygen is divided over a plurality of reactors.